

**CITY OF CARLSBAD
ENGINEERING STANDARDS**

VOLUME 3 – STANDARD DRAWINGS AND SPECIFICATIONS

CHAPTER 4 – POTABLE & RECYCLED WATER STANDARD DRAWINGS

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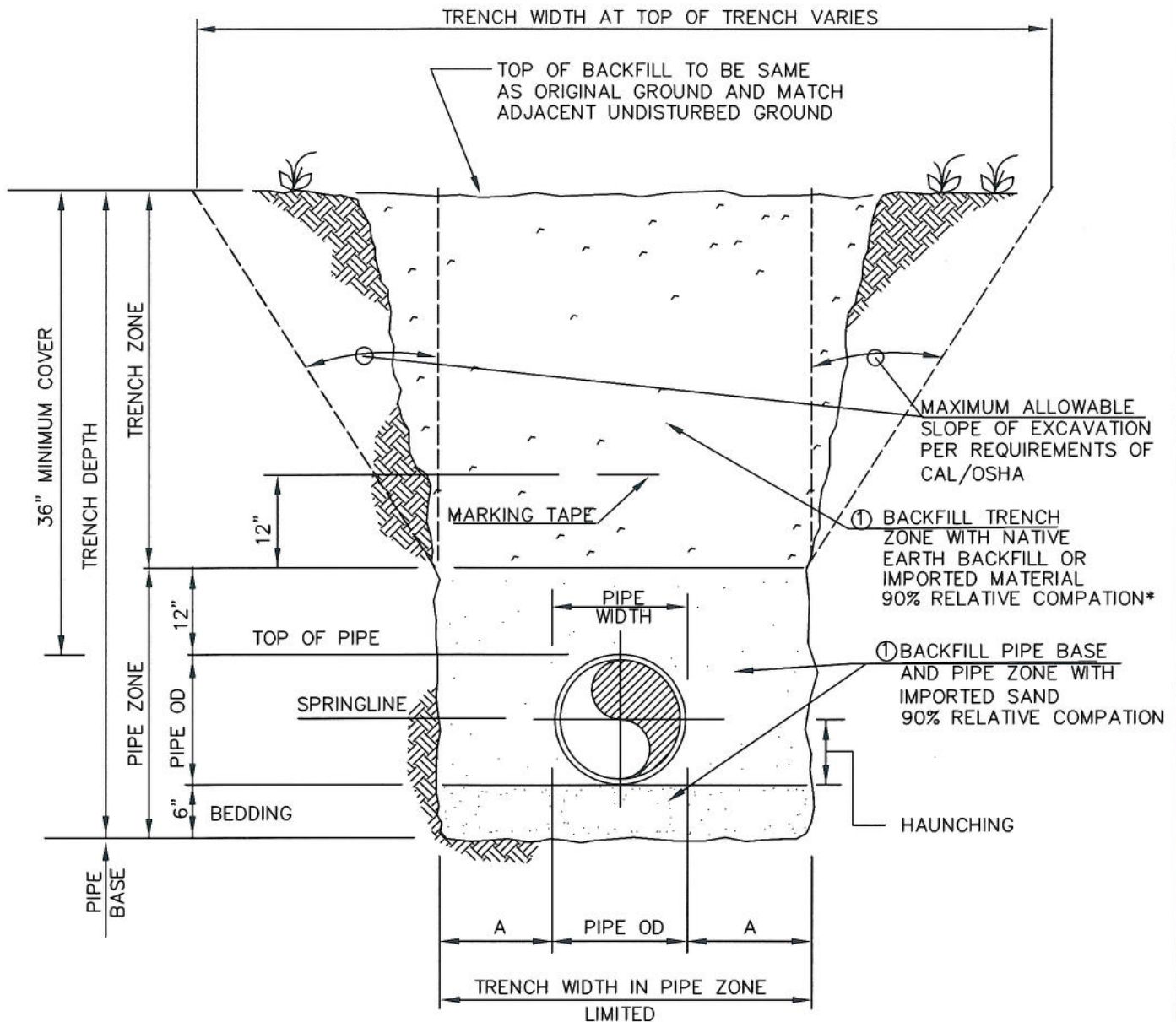
POTABLE AND RECYCLED WATER STANDARD DRAWINGS

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W-33	4" Air Vacuum Valve Assembly & Appurtenance
W-34	Welded Steel Pipe Section with Thrust Walls for Slopes and Dips

<u>DESCRIPTION</u>	<u>ABREVIATION</u>	<u>C.M.W.D. DWG. NO.</u>	<u>SYMBOL</u>
WATER PIPELINE (Size Per Plan)	W	None	
RECYCLED WATER PIPELINE (Size Per Plan)	RW	None	
WATER GATE VALVE & WATER BUTTERFLY VALVE	GV BFV	W-16 W-17	
BLOW-OFF ASSEMBLY	BO	W-6	
MANUAL AIR RELEASE ASSEMBLY	MAR	W-6	
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REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			STANDARD SYMBOLS FOR IMPROVEMENT PLANS	CITY ENGINEER
				DATE
				STANDARD DWG. NO. W-1

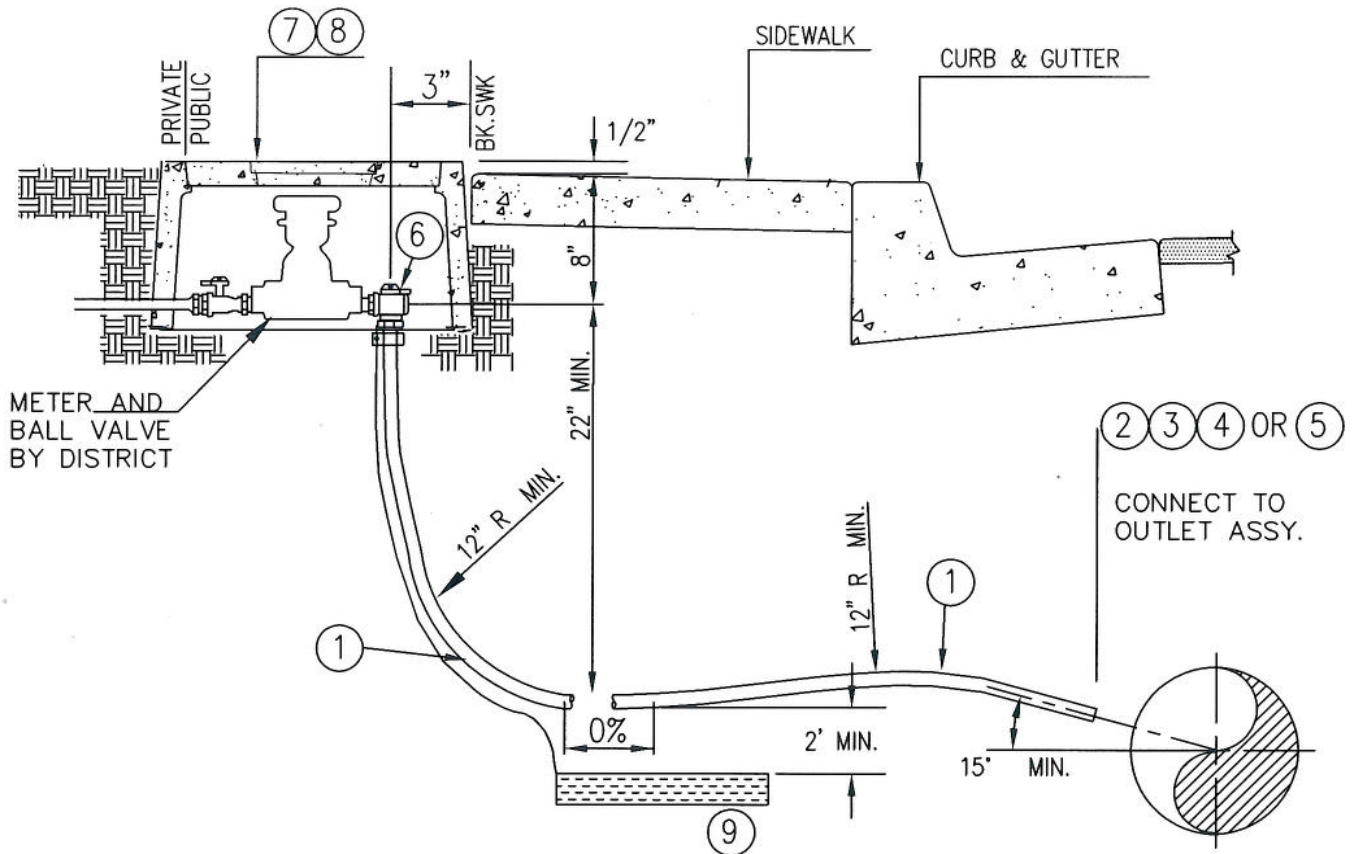


A	PIPE DIAMETER	MIN.	MAX.
	1" THROUGH 8"	6"	9"
	10" THROUGH 16"	8"	12"
	18" THROUGH 24"	10"	18"
	27" THROUGH 36"	12"	24"

*IN PAVED AREA, TRENCH ZONE SHALL BE COMPACTED TO 95% MIN.

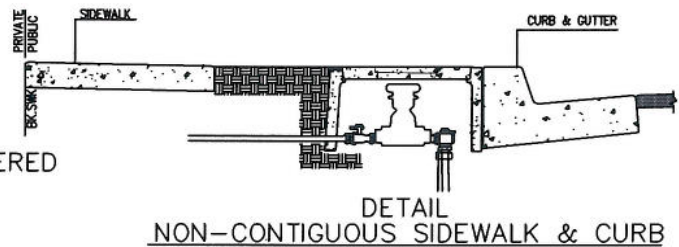
NO SCALE

ITEM	DESCRIPTION		SPEC/DWG
1	BEDDING AND BACKFILL MATERIAL		SECT 02223
REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT
			TYPICAL TRENCH SECTION Robert T. Johnson Jr. 7/10/08 CITY ENGINEER DATE STANDARD DWG. NO. W-2



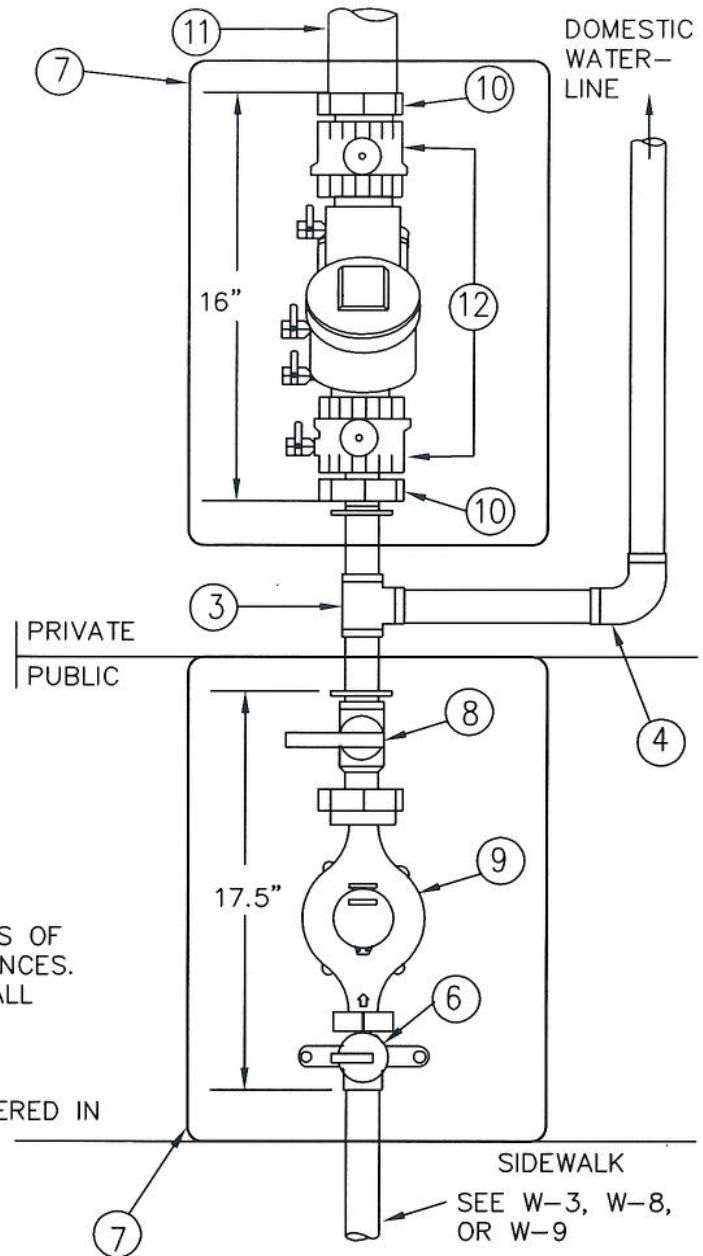
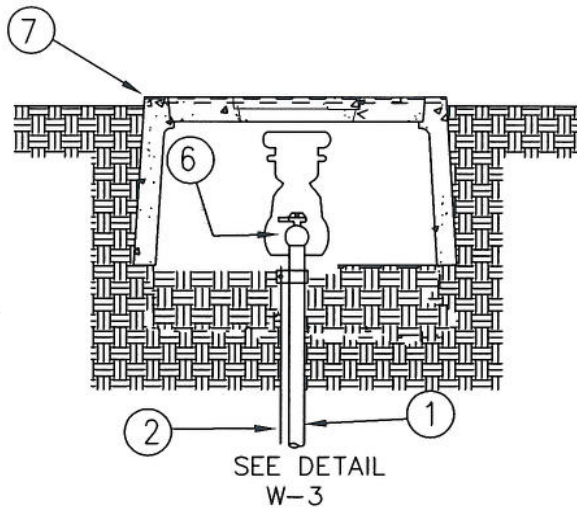
NOTES:

1. CONTRACTOR SHALL ADJUST ANGLE VALVE & METER BOX TO F.G. AFTER SIDEWALK IS INSTALLED & APPROVED
2. DISTRICT WILL SET METER AND BALL VALVE
3. ALL COPPER JIONTS SHALL BE SILVER SOLDERED IN CONFORMANCE WITH SPECIFICATIONS.
4. TAP TO MAIN TO BE MINIMUM OF 24" FROM NEAREST COUPLING, FITTING, VALVE, BELL OR OTHER TAPS.
5. POSITON ANODE MIDWAY BETWEEN PIPELINE AND METER BOX.
6. INTERIOR OF METER BOX SHALL BE CLEAR OF DEBRIS TO DEPTH OF 12" AND CORP STOP FULLY EXPOSED



ITEM	DESCRIPTION	SPEC/DWG
1	COPPER, (TYPE 'K', SOFT)	
2	OUTLET ON PVC PRESSURE PIPE	
3	OUTLET ON AC PIPE	W-8
4	OUTLET ON CML&C STEEL PIPE	W-9
5	OUTLET ON DUCTILE IRON PIPE	W-9
6	1" ANGLE METER STOP	
7	METER BOX AND COVER (TRAFFIC AREA)	
8	METER BOX AND COVER (NON-TRAFFIC AREA)	
9	30 LB. ZINC ANODE WITH ANODE LEAD WIRE	W-25

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			1" WATER SERVICE CONNECTION	CITY ENGINEER DATE
			FOR 5/8", 3/4" & 1" METERS	STANDARD DWG. NO. W-3



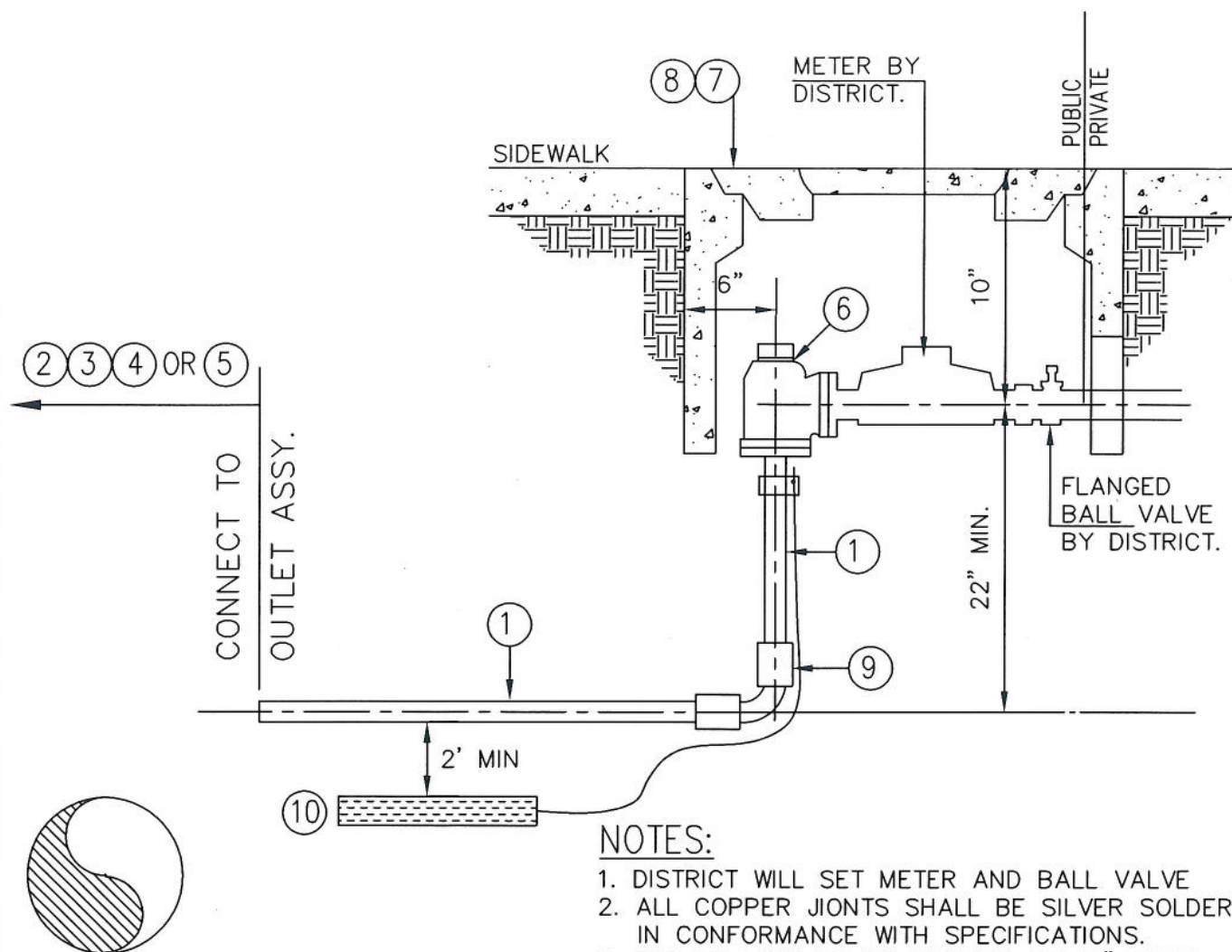
NOTES:

1. REFER TO DRAWING W-3 FOR SPECIFICATIONS OF INSTALLATION OF SERVICE LINE AND APPURTENANCES.
2. DISTRICT TO SET METER AND BALL VALVE, ALL OTHERS TO BE INSTALLED BY CONTRACTOR.
3. DOMESTIC WATER LINE MATERIAL WILL BE IN CONFORMANCE TO CODE.
4. ALL COPPER JOINTS SHALL BE SILVER SOLDERED IN CONFORMANCE WITH SPECIFICATIONS.

ITEM	DESCRIPTION	SPEC/DWG
1	COPPER, [TYPE 'K', SOFT]	
2	30 LB. ZINC ANODE LEAD WIRE	
3	1" COPPER TEE (SILVER SOLDER)	
4	1" 90° COPPER BEND (SILVER SOLDER)	
5	NOT USED	
6	1" ANGLE METER STOP	
7	#37 ARMORCAST METER BOX (OR EQUIVALENT)	
8	1" BALL VALVE	
9	1" WATER METER BY DISTRICT	
10	BRASS UNION	
11	2" FIRE SYSTEM WATER LINE(SIZE TO BE APPROVED BY FIRE MARSHAL)	
12	1" DOUBLE CHECK VALVE WITH SHUT OFF VALVES	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT
			1" DOMESTIC WATER SERVICE CONNECTION WITH FIRE SPRINKLER SYSTEM

Robert T. Johnson Jr.	7/10/08
CITY ENGINEER	DATE
STANDARD DWG. NO.	W-3A

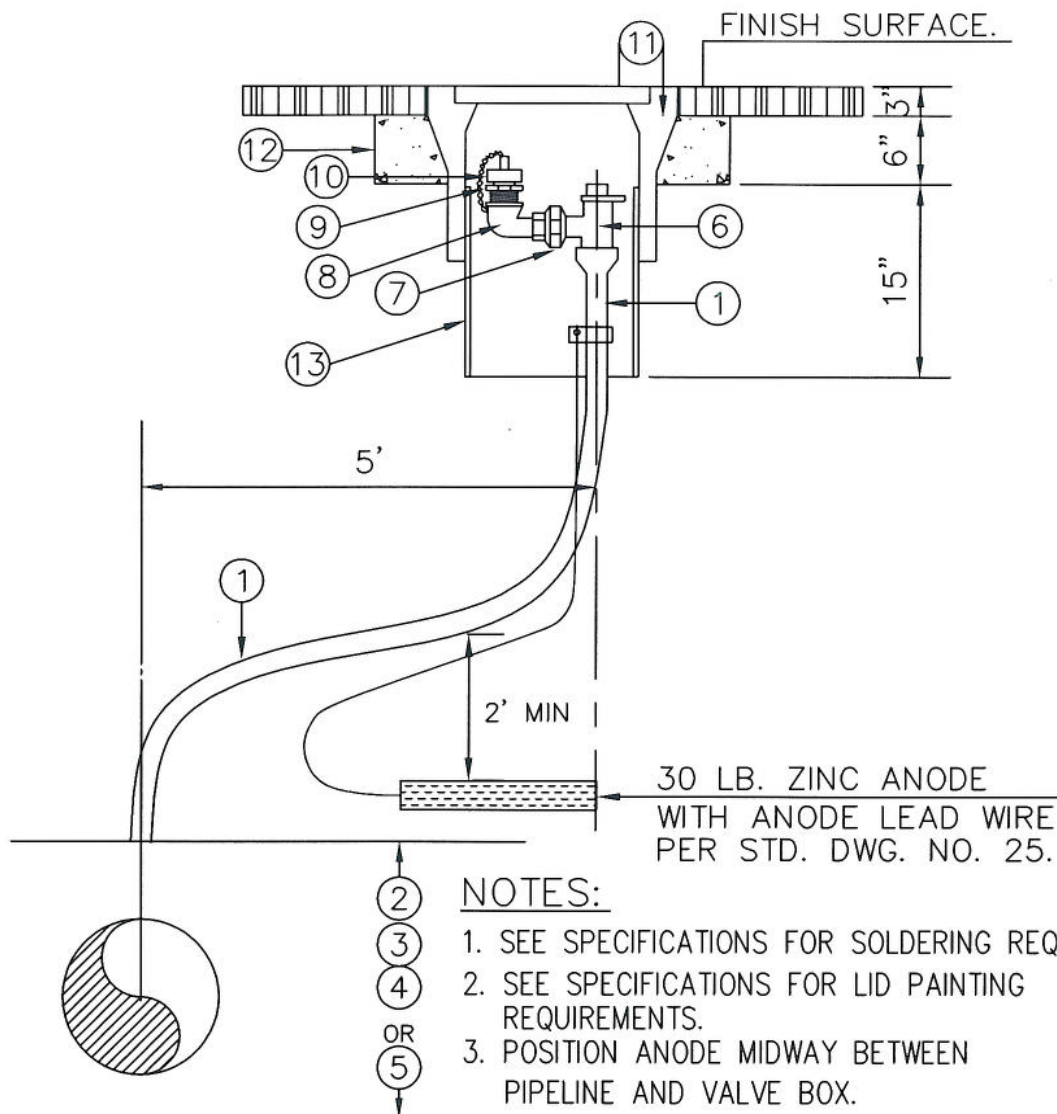


NOTES:

1. DISTRICT WILL SET METER AND BALL VALVE
2. ALL COPPER JIONTS SHALL BE SILVER SOLDERED IN CONFORMANCE WITH SPECIFICATIONS.
3. TAP TO MAIN TO BE MINIMUM OF 18" FROM NEAREST COUPLING OF TAP.
4. POSITION ANODE MIDWAY BETWEEN PIPELINE AND METER BOX.
5. FOR NON-CONTIGUOUS SIDEWALK SEE DETAIL DRAWING W3.

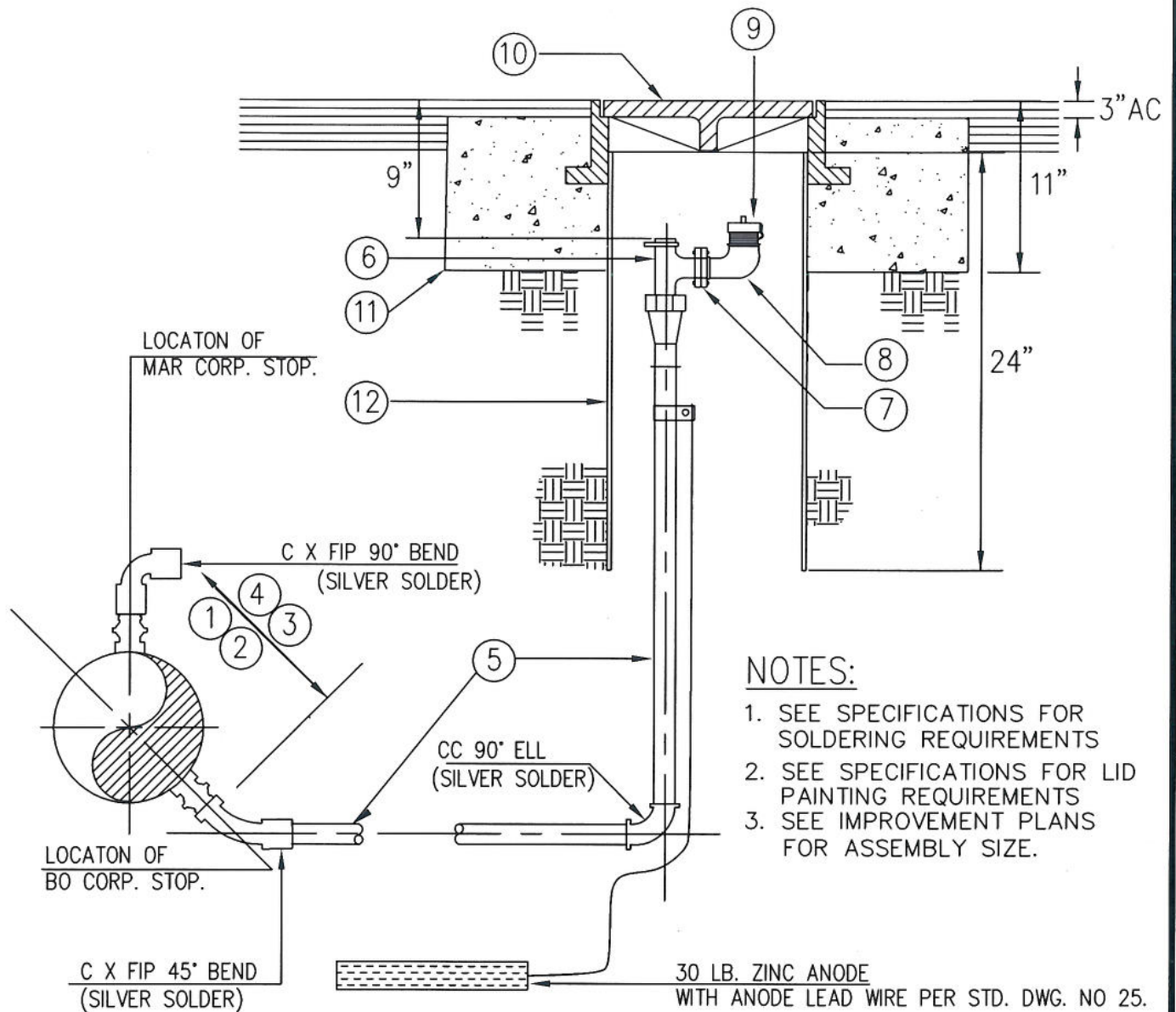
ITEM	DESCRIPTION	SPEC/DWG
1	2" COPPER SERVICE PIPE	
2	OUTLET ON PVC PRESSURE PIPE	W-8
3	OUTLET ON ACP PIPE	W-8
4	OUTLET ON CML&C STEEL PIPE	W-9
5	OUTLET ON DUCTILE IRON PIPE	W-9
6	2" ANGLE METER STOP	
7	METER BOX AND COVER (TRAFFIC AREA)	
8	METER BOX AND COVER (NON-TRAFFIC AREA)	
9	2" C X C 90° ELL (SILVER SOLDERED).	
10	30 LB. ZINC ANODE WITH ANODE LEAD WIRE	W-25

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			2" WATER SERVICE CONNECTION	CITY ENGINEER DATE
			FOR 1 1/2" & 2" METERS	STANDARD DWG. NO. W-4



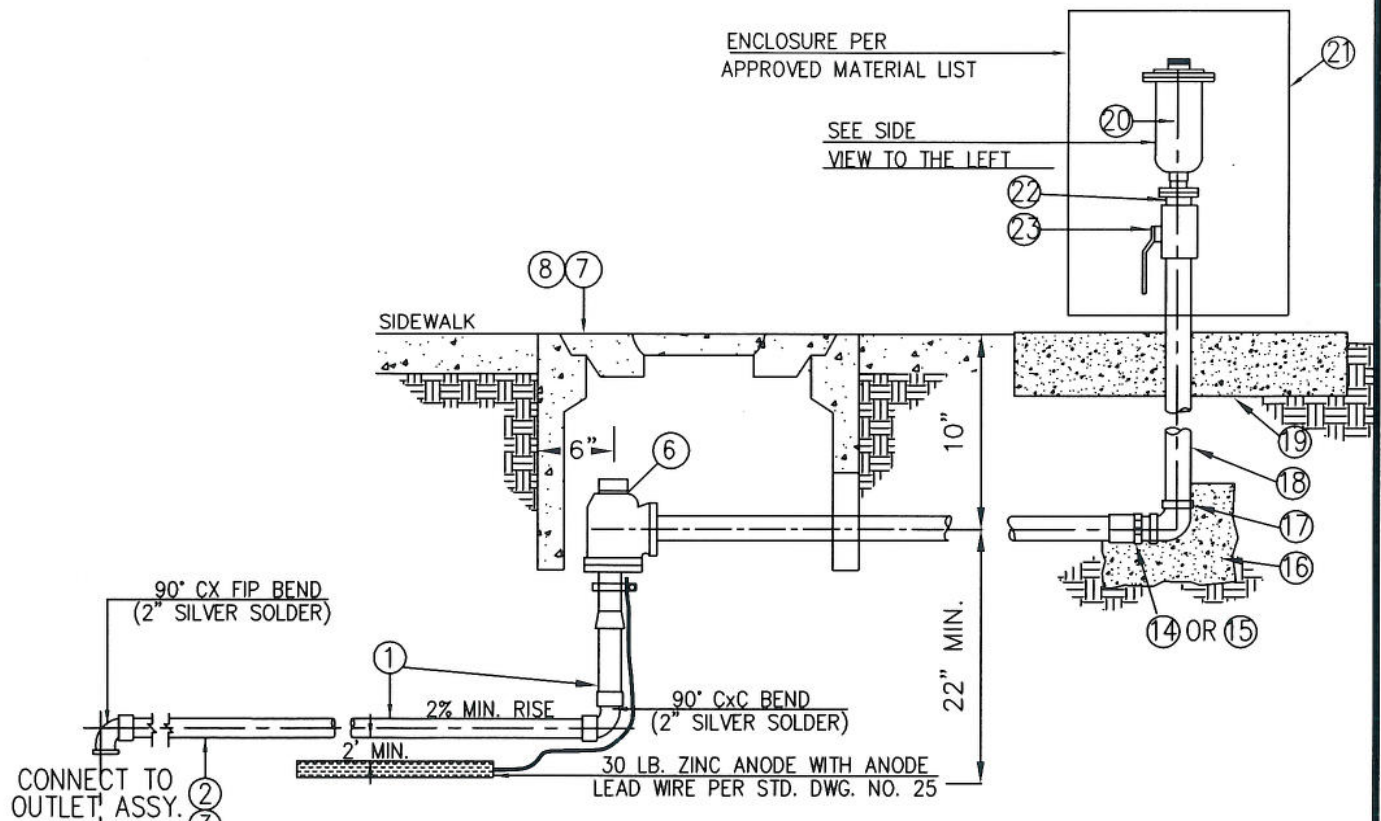
ITEM	DESCRIPTION	SPEC/DWG
1	1" TYPE "K" SOFT COPPER	
2	OUTLET ON PVC PRESSURE PIPE.	W-8
3	OUTLET ON AC PIPE.	W-8
4	OUTLET ON CML&C STEEL PIPE.	W-9
5	OUTLET ON DUCTILE IRON PIPE.	W-9
6	1" ANGLE METER STOP	
7	1 1/4" X 1" BRASS BUSHING.	
8	1" BRASS STREET ELL.	
9	1" ADAPTER M.I.P. X N.S.HT	
10	HOSE THREAD CAP	
11	VALVE BOX/LID	W-13
12	CONCRETE COLLAR	
13	8" PVC, C900	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			1" MANUAL AIR RELEASE ASSEMBLY	CITY ENGINEER DATE
				STANDARD DWG. NO. W-5



ITEM	DESCRIPTION	SPEC/DWG
1	OUTLET ON PVC PRESURE PIPE	W-8
2	OUTLET ON AC PIPE	W-8
3	OUTLET ON CML&C STEEL PIPE	W-9
4	OUTLET ON DUCTILE IRON PIPE	W-9
5	2" COPPER SERVICE PIPE. (TYPE 'K' SOFT).	
6	2" ANGLE METER STOP	
7	2" METER COMPANION FLANGE. (BRASS NUTS AND BOLTS).	
8	2" BRASS STREET ELL	
9	ADAPTER-2" M.I.P. X 2 1/2" NSHT W/ 2 1/2" CAP	
10	12" DIA. C.I. VALVE BOX COVER MARKED WATER OR RECYCLED WATER	
11	30" DIAMETER X 8" THICK CONCRETE RING	
12	12" GRAVITY SEWER PIPE SDR 35	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			2" BLOW-OFF / MANUAL AIR RELEASE ASSEMBLIES	CITY ENGINEER DATE
				STANDARD DWG. NO. W-6

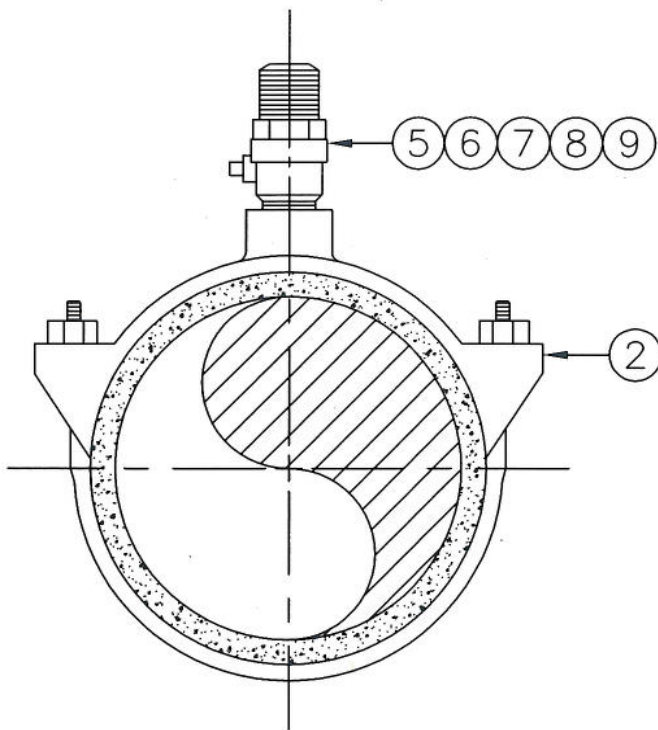


NOTES:

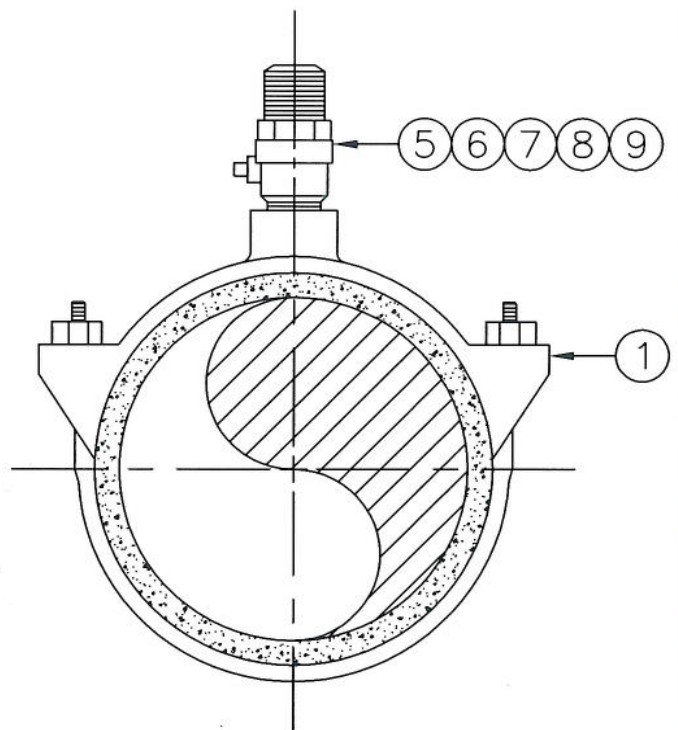
1. SEE SPECIFICATIONS FOR SOLDERING REQUIREMENTS.
2. SEE SPECIFICATIONS FOR PAINTING REQUIREMENTS.
3. SEE IMPROVEMENT PLANS FOR ASSEMBLY SIZE.
4. ALL VALVES AND FITTINGS SHALL BE SAME SIZE AS AIR VENT INLET.
5. POSITON ANODE MIDWAY BETWEEN PIPELINE AND VALVE BOX.

ITEM	DESCRIPTION	SPEC/DWG	ITEM	DESCRIPTION	SPEC/DWG
1	1" COPPER, (TYPE 'K', SOFT), 2" COPPER SER. PIPE. (TYPE "K" SOFT)		14	2" COPPER ADATER, COPPER SOLDER JOINT x MALE IPT, 0-300 PSI	
2	OUTLET ON PVC PRESSURE PIPE	W-8	15	2" FLARED TUBE STR CPLG, COPPER x MALE IPT, 0-150 PSI	
3	OUTLET ON AC PIPE	W-8	16	CONCRETE ANCHOR BLOCK WITH 2 CUBIC FEET	
4	OUTLET ON CML&C STEEL PIPE	W-9	17	2" CL 125 CAST BRONZE 90° ELBOW WITH FEMALE IPT	
5	OUTLET ON DUCTILE IRON PIPE	W-9	18	2" BRASS PIPE, REGULAR WALL WITH MALE IPT	
6	1" OR 2" ANGLE METER STOP		19	30"x30"x6" CONCRETE PAD	
7	METER BOX & COVER (TRAFFIC AREA)		20	2" COMB. AIR RELEASE AND VACUUM VALVE, FEMALE IPT	
8	METER BOX & COVER (NONTRAFFIC AREA)		21	AVE ASSEMBLY ENCLOSURE	
9	1" OR 2" HEAVY DUTY COMBINATION AIR RELEASE.		22	1" OR 2" METER STOP	
10	1" OR 2" BRASS STREET "L"		23	2" BRONZE BALL VALVE	
11	1" OR 2" X 6" BRASS NIPPLE				
12	1" OR 2" SCHEDULE 40 PVC				
13	BRASS METER COMPANION FLANGE. (BRASS NUTS AND BOLTS ON 2")				

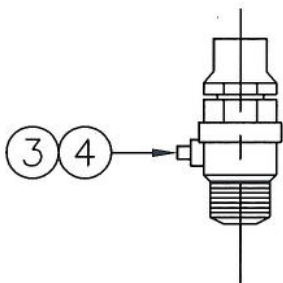
REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson 7/10/08
			ABOVE SURFACE 1 & 2" AIR-VACUUM VALVE ASSEMBLY & APPURTENANCE	CITY ENGINEER DATE
				STANDARD DWG. NO. W-7



A.C. MAIN



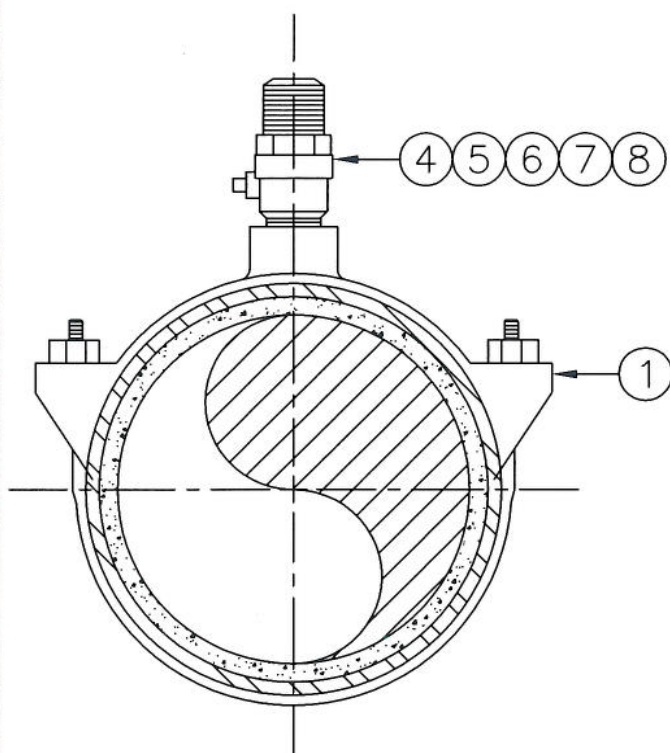
P.V.C. MAIN



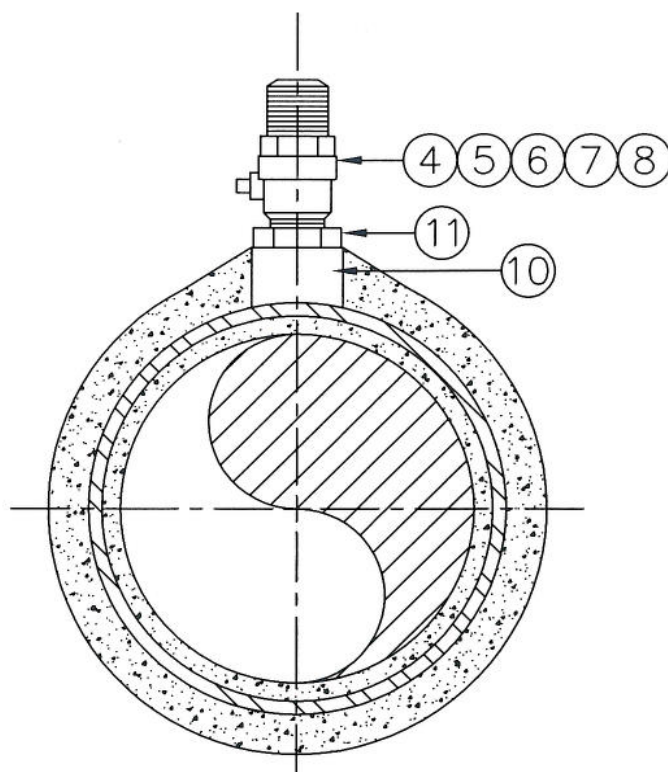
FOR WATER SERVICE
CONNECTION (TYP.)

ITEM	DESCRIPTION	SPEC/DWG
1	DOUBLE BAND BRASS SERVICE SADDLE.	
2	BRONZE DOUBLE STRAP SERVICE SADDLE.	
3	CORP. STOP 1" WATER SERVICE.	W-3
4	CORP. STOP 2" WATER SERVICE.	W-4
5	CORP. STOP 1" AIR VACUUM VALVE ASSEMBLY.	W-7
6	CORP. STOP 2" AIR VACUUM VALVE ASSEMBLY	W-7
7	1" MANUAL AIR RELEASE ASSEMBLY	W-5
8	2" BLOW-OFF MANUAL AIR RELEASE ASSEMBLY.	W-5&6
9	2" MANUAL BLOW-OFF / AIR RELEASE ASSEMBLY.	W-6&7

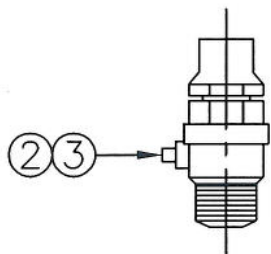
REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			OUTLETS ON A.C. OR P.V.C. MAIN FOR	CITY ENGINEER DATE
			1 INCH THRU 2 INCH ASSEMBLIES	STANDARD DWG. NO. W-8



D.I. MAIN



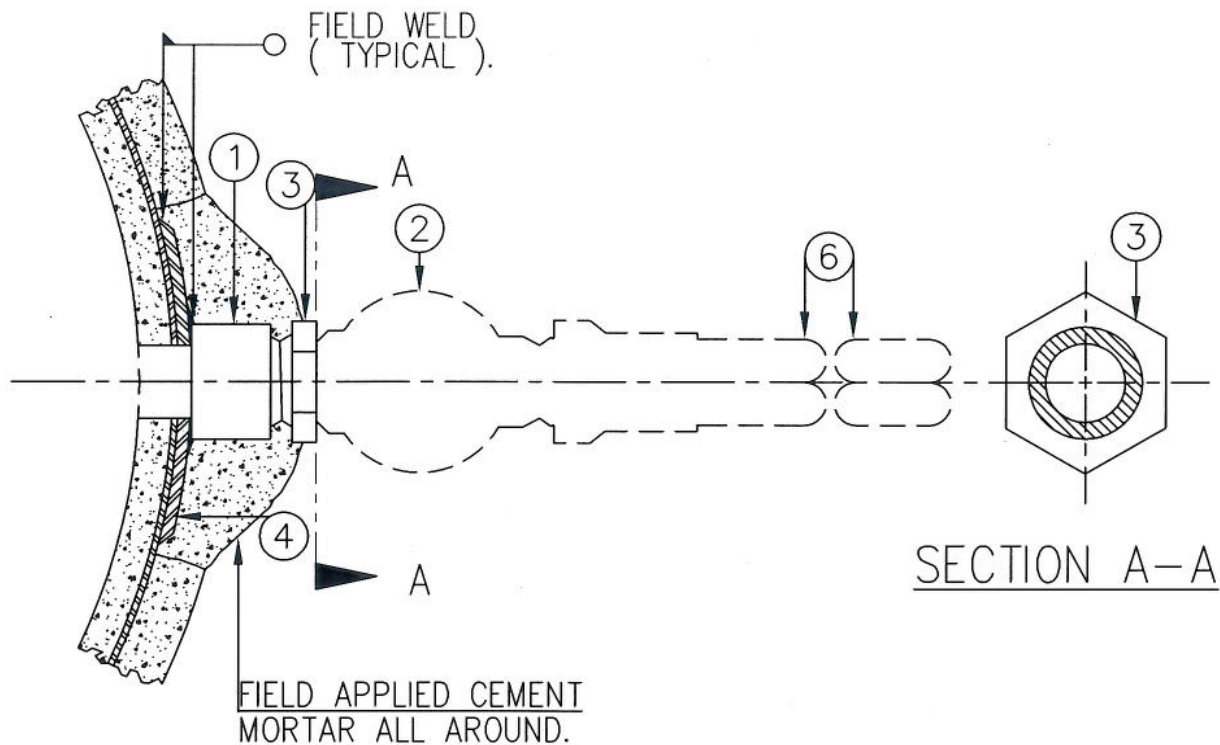
STEEL MAIN



FOR WATER SERVICE
CONNECTION (TYP.)

ITEM	DESCRIPTION	SPEC/DWG
1	DOUBLE BAND BRASS SERVICE SADDLE.	
2	CORP. STOP 1" WATER SERVICE.	W-3
3	CORP. STOP 2" WATER SERVICE.	W-4
4	CORP. STOP 1" AIR VACUUM VALVE ASSEMBLY.	W-7
5	CORP. STOP 2" AIR VACUUM VALVE ASSEMBLY.	W-7
6	1" MANUAL AIR RELEASE ASSEMBLY.	W-5
7	2" BLOW-OFF MANUAL AIR RELEASE ASSEMBLY.	W-6&7
8	2" BLOW-OFF / AIR RELEASE ASSEMBLY.	W-6&7
9	NOT USED	
10	3000 PSI FORGED STEEL COUPLING WELDED TO MAIN.	W-14
11	INSULATING BUSHING. (LEXAN OR DELRIN).	W-10

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	
			OUTLETS ON D.I. OR STEEL MAIN FOR	Robert T. Johnson, Jr. 7/10/08
			1 INCH THRU 2 INCH ASSEMBLIES	CITY ENGINEER DATE
				STANDARD DWG. NO. W-9



NOTES:

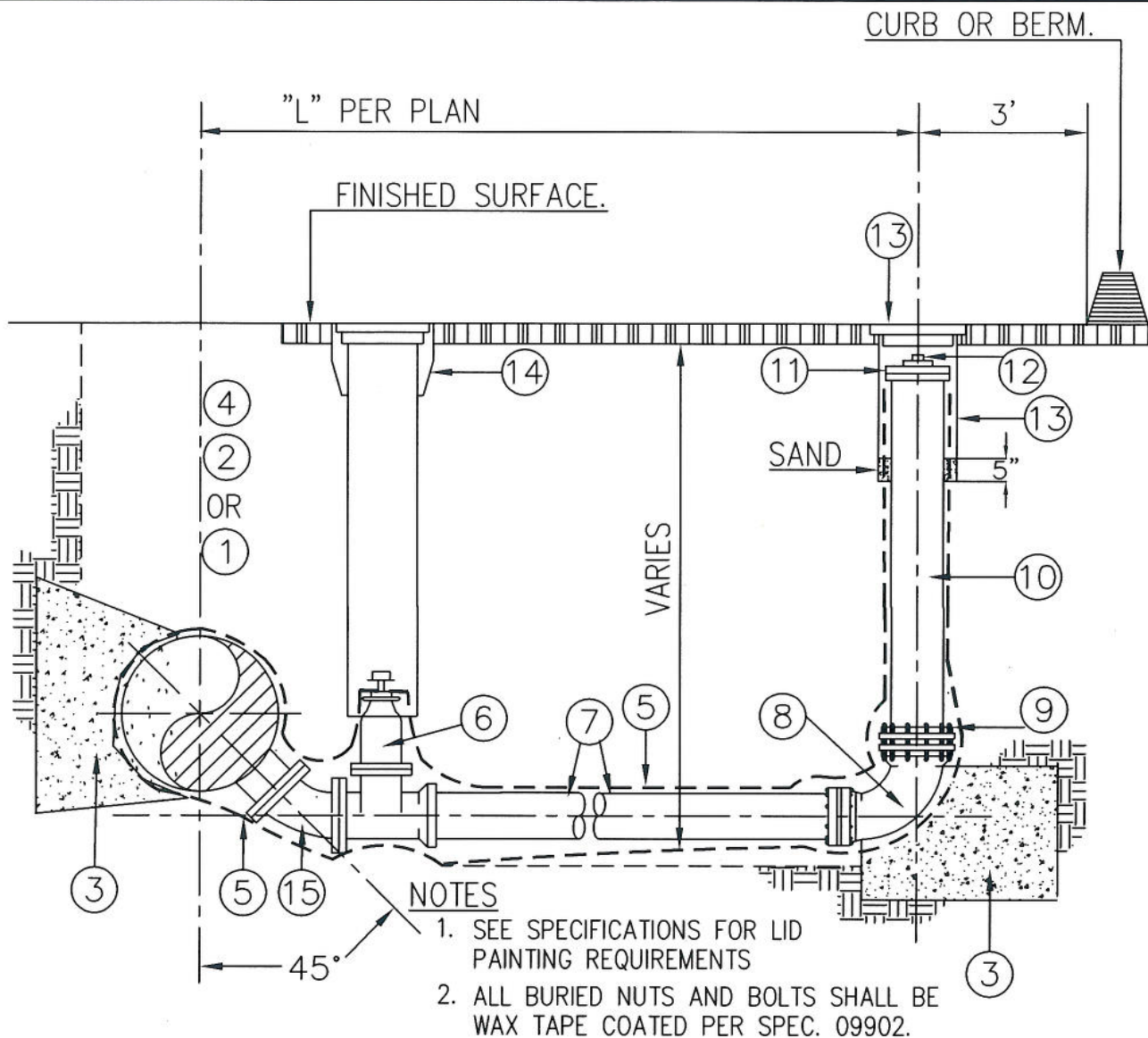
1. DIELECTRIC CONNECTIONS SHALL BE REQUIRED ON ALL AIR AND VACUUM VALVE ASSEMBLIES, MANUAL AIR RELEASE ASSEMBLIES, BLOW-OFF ASSEMBLIES AND WATER SERVICE ASSEMBLIES WHERE COPPER TUBING OR BRASS PIPE CONNECTIONS ARE MADE TO STEEL MAINS.

SIZING TABLE

COPPER TUBING	VALVE OR CORP. STOP	STEEL COUPLING	INSULATING BUSHING
2"	2"	2 1/2"	2 1/2" x 2"
1"	1"	1 1/2"	1 1/2" x 1"

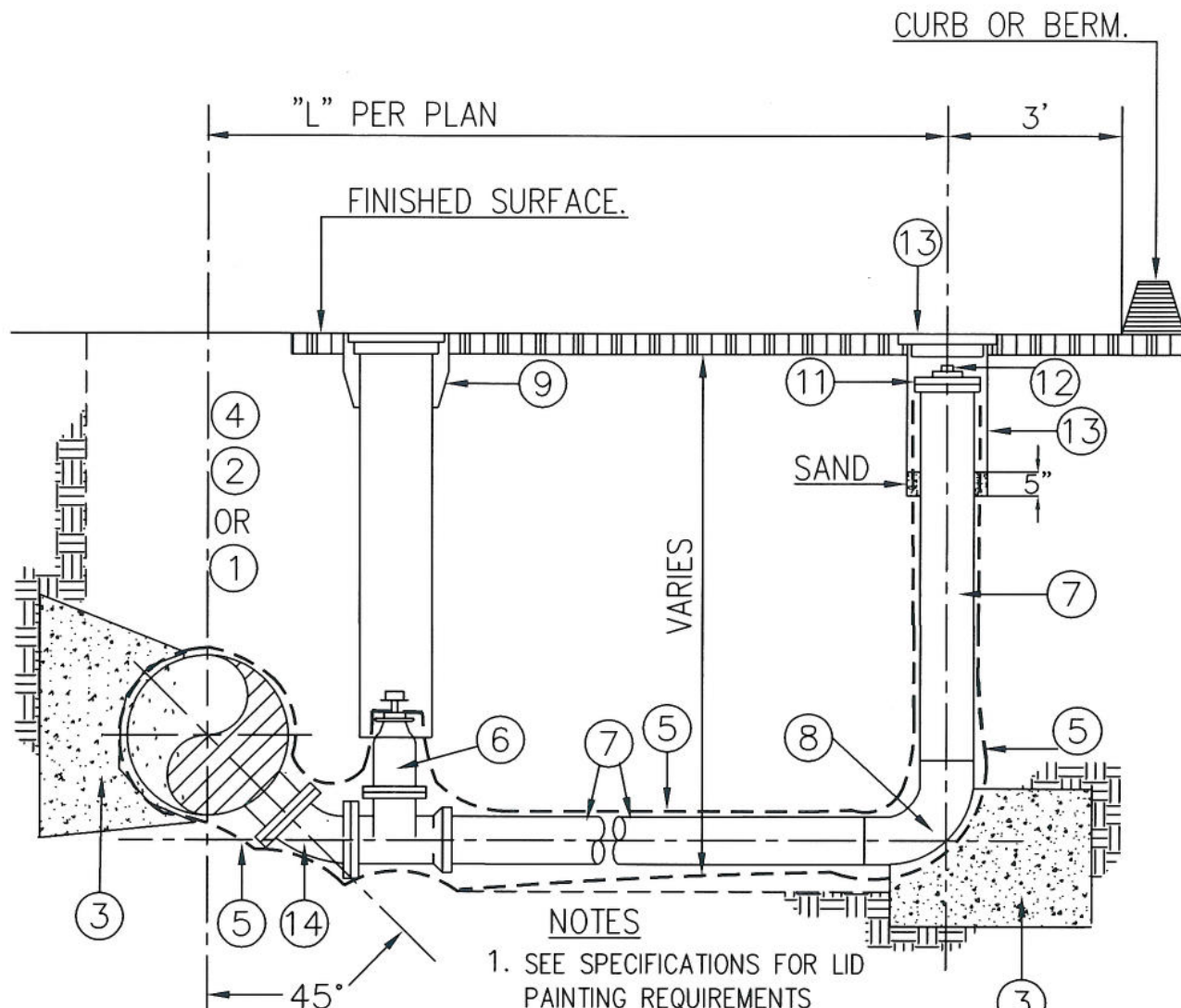
ITEM	DESCRIPTION	SPEC/DWG
1	CL 3000 STEEL COUPLING - STEEL WELDED.	
2	SEE DRAWING NO W9	W-9
3	INSULATING BUSHING - NPT LEXAN OR DELRIN.	
4	9" DIA. 10 GA. SADDLE.	
5	NOT USED	
6	1" & 2" COPPER SERVICE PIPE (TYPE "K" SOFT).	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	
			DIELECTRIC CONNECTION	Robert T. Johnson Jr. 7/19/08
			TO STEEL MAIN	CITY ENGINEER DATE
				STANDARD DWG. NO. W-10



ITEM	DESCRIPTION	SPEC/DWG
1	A.C.P. - RT X FL TEE.	
2	STEEL PIPE - FL TAPPED CONNECTION.	W-14
3	CONCRETE THRUST BLOCK 560-C-3250.	W-19
4	D.I.P. - MJ X FL TEE. (FL. BOSS OUTLET ALTERNATE / DELETE THRUST BLOCK).	
5	POLYETHYLENE WRAP.	
6	FL X PJ GATE VALVE.	
7	PE CL. 50 D.I.P.	
8	MJ 90° BEND.	
9	RETAINER GLAND.	
10	FL X PE CL. 50 D.I.P.	
11	COMPANION FLANGE CONCENTRICALLY DRILLED AND TAPPED FOR ITEM 12.	
12	THREADED PLUG, OR STL. NIPPLE, FEMALE HOSE NIPPLE & HOSE CAP.	
13	12" VAL. BOX MKD. "WATER" OR "RECYCLED WATER"	W-6
14	VALVE BOX ASSEMBLY	W-13
15	FL X FL 45° D.I. BEND.	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			6" BLOW-OFF ASSEMBLY (DUCTILE IRON)	CITY ENGINEER DATE
				STANDARD DWG. NO. W-11



NOTES

1. SEE SPECIFICATIONS FOR LID PAINTING REQUIREMENTS
2. ALL BURIED NUTS AND BOLTS SHALL BE WAX TAPE COATED PER SPEC. 09902

ITEM	DESCRIPTION	SPEC/DWG
1	A.C.P. - RT X FL TEE.	
2	STEEL PIPE - FL TAPPED CONNECTION.	W-14
3	CONCRETE THRUST BLOCK 560-C-3250.	W-19
4	D.I.P. - MJ X FL TEE. (FL. BOSS OUTLET ALTERNATE / DELETE THRUST BLOCK).	
5	POLYETHYLENE WRAP.	
6	FL X FL GATE VALVE.	
7	CML&C 0.25" STEEL	
8	WELD ON PREFABRICATED CML&C W/TAPE COAT STEEL / 90° BEND	09870; 15061
9	VALVE BOX ASSEMBLY	W-13
10	FL X PE CML&C STL/SOWO FL	
11	COMPANION FLANGE DRILLED AND TAPPED FOR ITEM 12.	
12	THREADED PLUG, OR STL. NIPPLE, FEMALE HOSE NIPPLE & HOSE CAP.	
13	12" VAL. BOX MKD. "WATER" OR "RECYCLED WATER"	W-6
14	FL X FL 45° D.I. BEND	

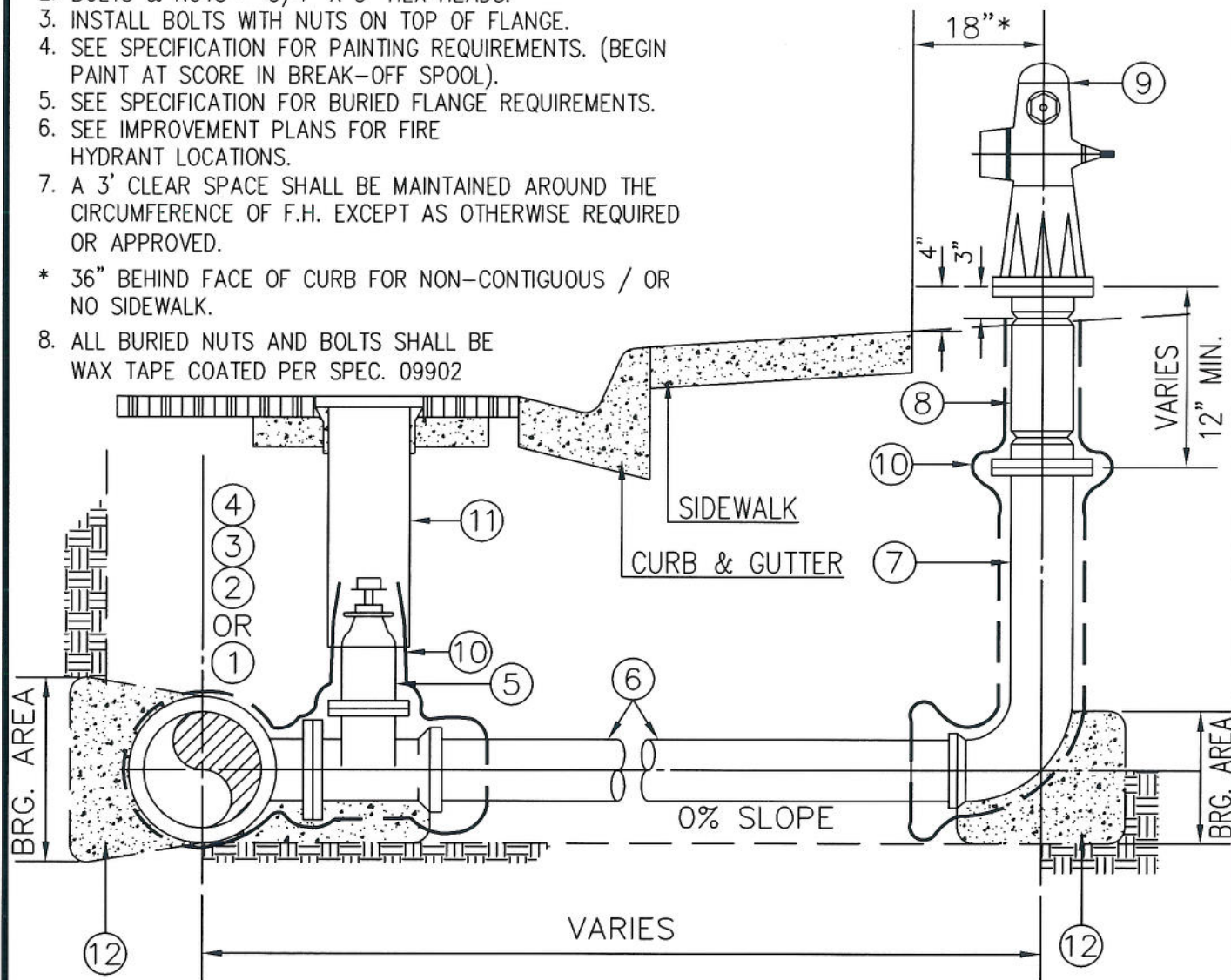
REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			6" BLOW-OFF ASSEMBLY	CITY ENGINEER DATE
			(STEEL)	STANDARD DWG. NO. W-11A

NOTES:

1. FIRE HYDRANT BASE - 6 EA. 13/16" DIA. HOLES.
2. BOLTS & NUTS - 3/4" X 3" HEX HEADS.
3. INSTALL BOLTS WITH NUTS ON TOP OF FLANGE.
4. SEE SPECIFICATION FOR PAINTING REQUIREMENTS. (BEGIN PAINT AT SCORE IN BREAK-OFF SPOOL).
5. SEE SPECIFICATION FOR BURIED FLANGE REQUIREMENTS.
6. SEE IMPROVEMENT PLANS FOR FIRE HYDRANT LOCATIONS.
7. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF F.H. EXCEPT AS OTHERWISE REQUIRED OR APPROVED.

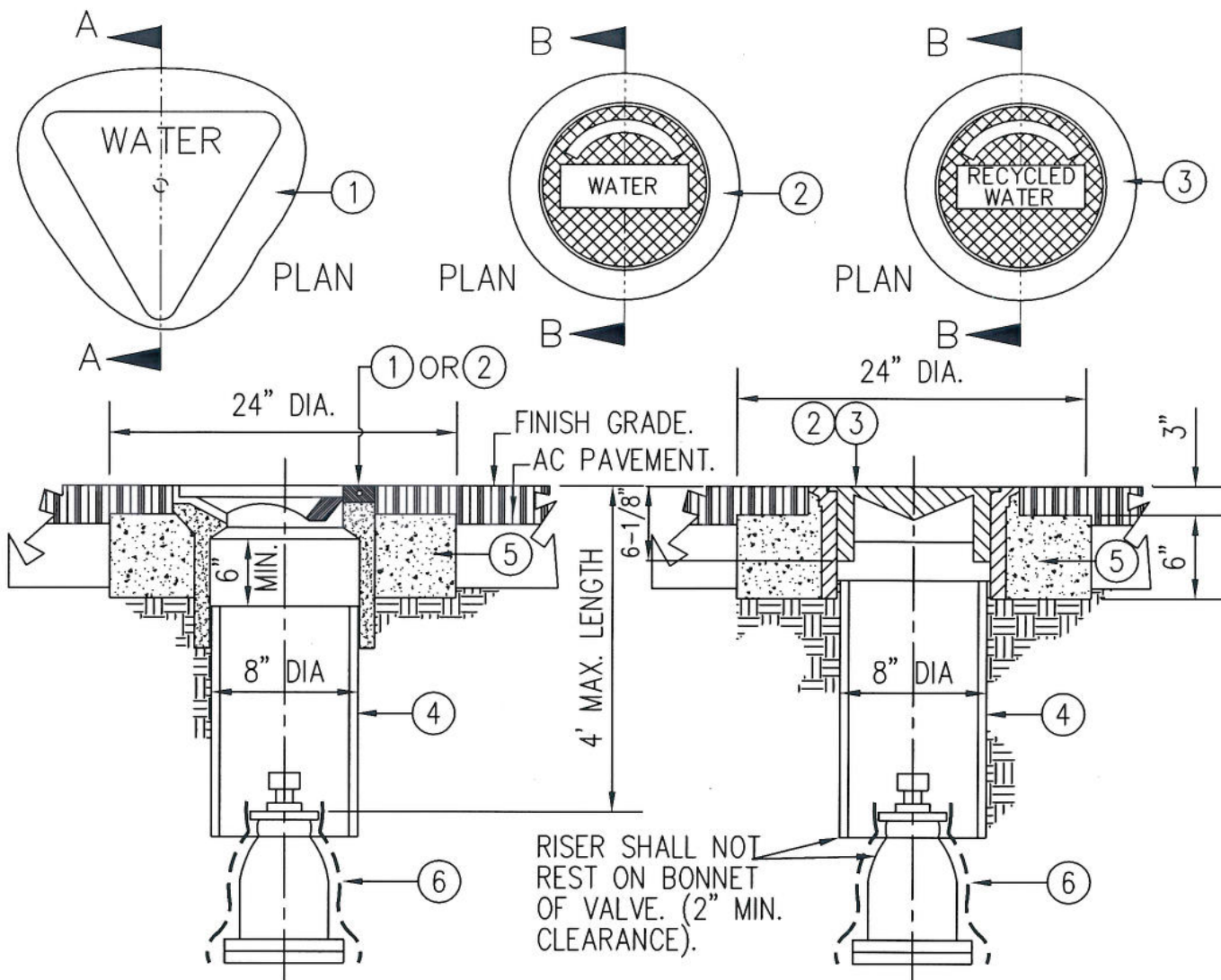
* 36" BEHIND FACE OF CURB FOR NON-CONTIGUOUS / OR NO SIDEWALK.

8. ALL BURIED NUTS AND BOLTS SHALL BE WAX TAPE COATED PER SPEC. 09902



ITEM	DESCRIPTION	SPEC/DWG
1	A.C.P. - RT X FL TEE.	
2	DUCTILE IRON PIPE - D.I. TEE WITH 6" FL. OUTLET. (PJ OR MJ X FL)	
3	STEEL PIPE - 6" STEEL FL OUTLET.	
4	ASBESTOS CEMENT PIPE - RT X FL TEE WITH 6" OUTLET.	
5	6" FL X PJ GATE VALVE.	
6	6" CLASS 150 PVC PRESSURE PIPE.	
7	6" X 30" PJ X FL BURYELL. (6 HOLE PATTERN).	
8	6" VARIABLE LENGTH FL. BREAK OFF SPOOL. (GROOVED BOTH ENDS).	
9	6" FIRE HYDRANT.	
10	POLYETHYLENE ENCASEMENT	
11	VALVE BOX ASSEMBLY.	
12	THRUST BLOCK	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			FIRE HYDRANT ASSEMBLY	CITY ENGINEER DATE
				STANDARD DWG. NO. W-12



SECTION A-A
DOMESTIC WATER

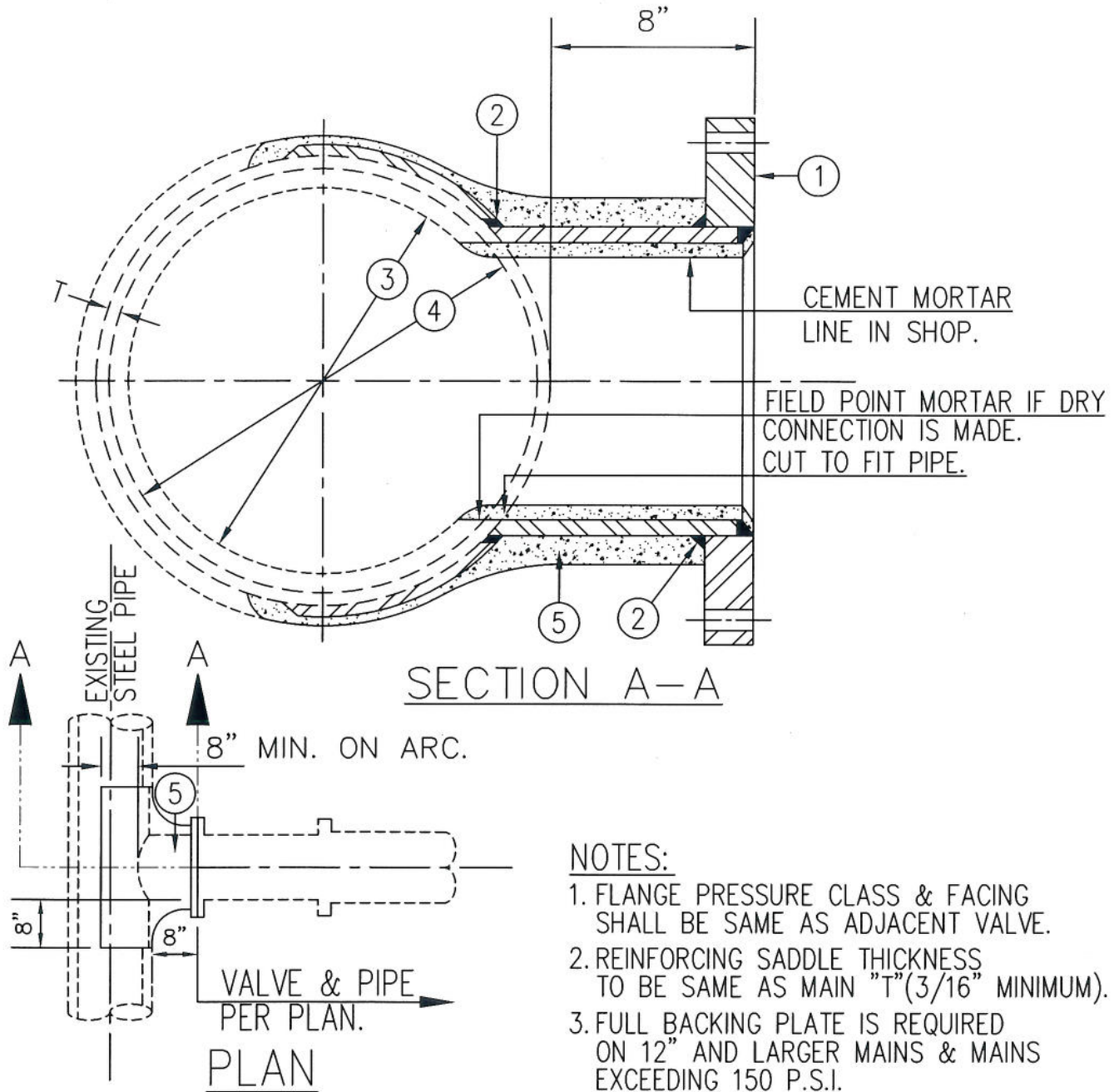
SECTION B-B
RECLAIMED WATER

NOTES:

1. IN NON-ROAD AREAS PLACE MARKER POST NEXT TO VALVE BOX ASSEMBLY AS DIRECTED BY THE ENGINEER. (SEE DRAWING NO. 23).
2. ALL BURIED NUTS AND BOLTS SHALL BE WAX TAPE COATED PER SPEC. 09902
3. SEE DRAWING NO. 23 FOR GATE VALVE EXTENSION.
4. UPPER SIDE OF LID TO RECEIVE 2 COATS OF PAINT. SEE SPECIFICATIONS FOR PAINTING REQUIREMENTS, (PAGE 4).

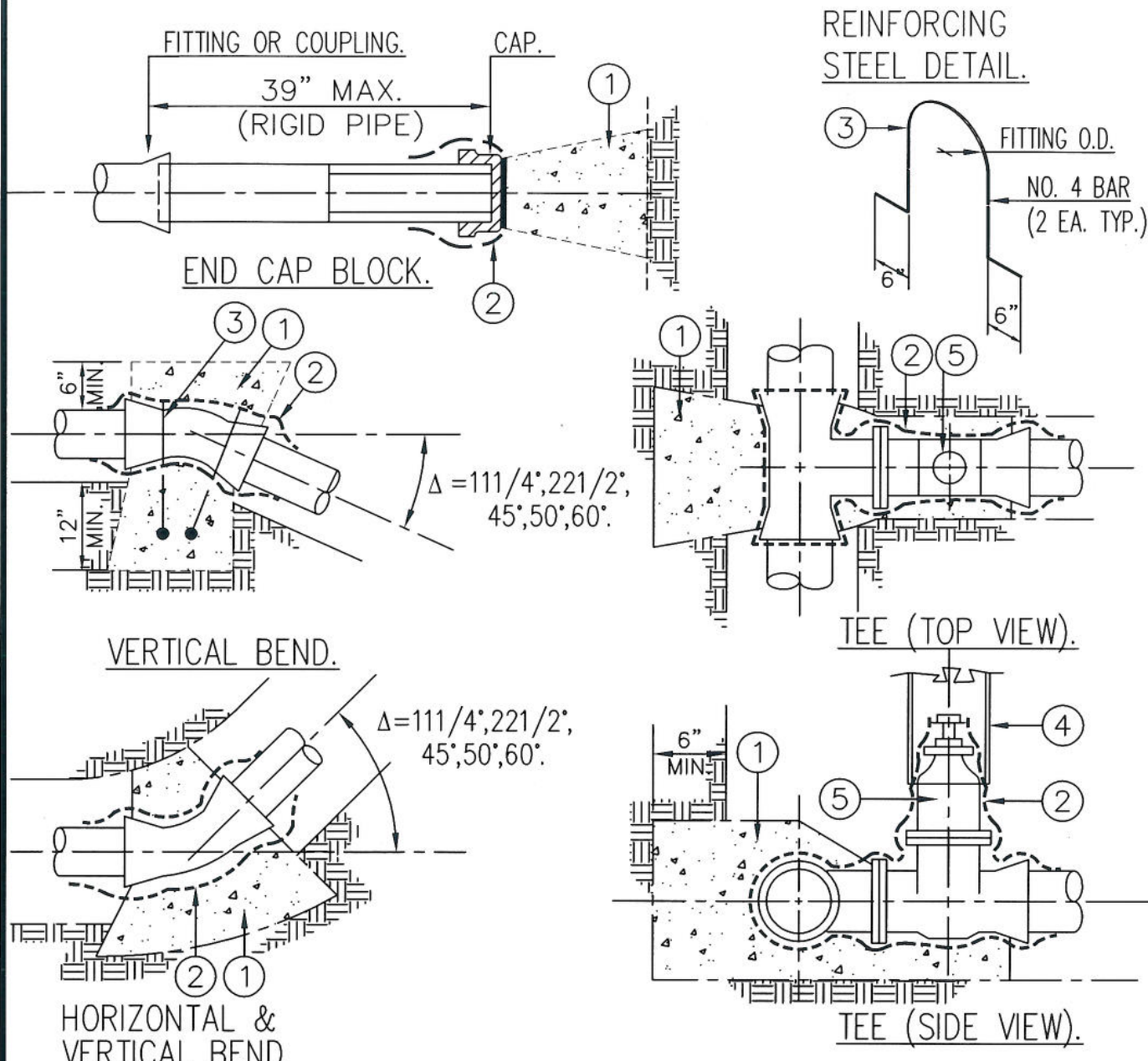
ITEM	DESCRIPTION	SPEC/DWG
1	VAL. BOX & COVER WITH NON-SKID C.I. COVER AND LIFT HOLE, MARKED "WATER".	
2	VAL. BOX & COVER FOR NORMALLY CLOSED VALVE.	
3	VAL. BOX & COVER MARKED "RECYCLED WATER".	
4	8" C900 PVC OR ASPHALT COATED WELL CASING.	
5	CONCRETE COLLAR IDENTIFY CONC. BY CLASS 560-C-3250	
6	POLYETHYLENE ENCASEMENT	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			VALVE BOX	CITY ENGINEER
			ASSEMBLY	DATE
				STANDARD DWG. NO. W-13



ITEM	DESCRIPTION	SPEC/DWG
1	S.O.W.O. FLANGE.	
2	FIELD WELD (TYPICAL).	
3	EXISTING STEEL PIPE.	
4	EXISTING STEEL PIPE I.D.	
5	3/4" MIN. CEMENT MORTAR COAT IN FIELD.	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			TAPPED CONNECTION TO STEEL MAIN	CITY ENGINEER DATE
				STANDARD DWG. NO. W-14



NOTES:

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| <p>1. FITTINGS SHALL BE DUCTILE IRON FOR D.I.P. & P.V.C.; CAST IRON FOR A.C.P. (CEMENT LINED SHORT BODY).</p> <p>2. FOR A.C. PIPE, A MIN. 3'-3" TO A 6'-6" MAX. LENGTH INTO AND OUT OF ALL FITTINGS.</p> | <p>3. CONCRETE SHALL BE 6 SACK, (3250 P.S.I.). A MIN. 3 DAY CURING TIME BEFORE HYDROSTATIC TEST.</p> <p>4. SEE DWG'S. NO. 17 & 18 FOR REDUCER, PLUG, & BUTTERFLY VALVE THRUST BLOCKS.</p> <p>5. ENGINEER TO PROVIDE CALCULATIONS FOR THRUST/ANCHOR BLOCK SIZE.</p> | <p>6. ALL BURIED NUTS AND BOLTS SHALL BE WAX TAPE COATED PER SECT. 09902</p> |
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ITEM	DESCRIPTION	SPEC/DWG
1	CONCRETE THRUST BLOCK. (560-C-3250)	
2	POLYETHYLENE ENCASEMENT.	
3	NO. 4 REINFORCING STEEL.	
4	VALVE BOX ASSEMBLY.	
5	FL X RT OR FL X MJ GATE VALVE.	

REV.	APPROVED	DATE	CARLSBAD MUNICIPAL WATER DISTRICT	Robert T. Johnson Jr. 7/10/08
			CONCRETE THRUST BLOCKS	CITY ENGINEER DATE
			FOR NON-RESTRAINED JOINTS	STANDARD DWG. NO. W-15